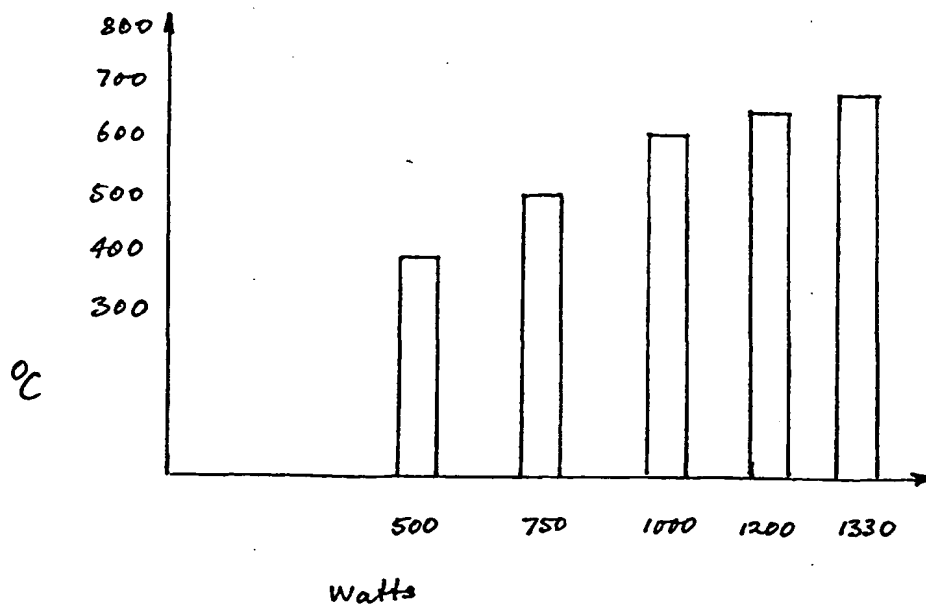




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>6</sup> :</b> <b>H05B 3/14</b>	<b>A1</b>	<b>(11) International Publication Number:</b> <b>WO 00/18189</b> <b>(43) International Publication Date:</b> 30 March 2000 (30.03.00)
<b>(21) International Application Number:</b> PCT/AU99/00791 <b>(22) International Filing Date:</b> 17 September 1999 (17.09.99) <b>(30) Priority Data:</b> PP 5995 18 September 1998 (18.09.98) AU <b>(71) Applicant (for all designated States except US):</b> EMAIL LIMITED [AU/AU]; Joynton Avenue, Waterloo, NSW 2017 (AU). <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> TORPY, Keith, Mario [AU/AU]; 22a Kirkham Street, Beecroft, NSW 2119 (AU). GEHRIG, David, M. [AU/AU]; 39 Garfield Avenue, Bonnet Bay, NSW 2226 (AU). <b>(74) Agents:</b> DAVIDSON, Geoffrey, Robert et al.; Halford & Company, Level 7, 1 Market Street, Sydney, NSW 2000 (AU).		<b>(81) Designated States:</b> AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i>

(54) Title: THIN FILM HEATING ELEMENT



## (57) Abstract

A thin film heating element capable of withstanding power densities of 10–20 watts cm<sup>-2</sup> and/or temperatures up to 650°C is disclosed. The preferred form of the heating element includes a layer of tin oxide doped with relatively large quantities of cerium and lanthanum deposited on an insulating substrate by pyrolysis of a solution of monobutyl tin trichloride containing the above rare earth elements. The solution and subsequent oxide layer further include donor and acceptor elements such as antimony and zinc to enhance the conductivity of the heating element.